UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

WSOU INVESTMENTS, LLC D/B/A BRAZOS LICENSING AND DEVELOPMENT, Plaintiff, v. HEWLETT PACKARD ENTERPRISE COMPANY, Defendant.	Nos. 6:20-cv-00725-ADA 6:20-cv-00726-ADA 6:20-cv-00727-ADA 6:20-cv-00728-ADA **JURY TRIAL DEMANDED**

BRAZOS'S REPLY CLAIM CONSTRUCTION BRIEF REGARDING U.S. PATENT NOS. 7,280, 534; 7,386,630; 7,443,832; AND 7,519,056

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2	RFC 3330, *Special-Use IPv4 Addresses* (Sept. 2002), WSOU-HPE-00008247
3	IETF, draft Encapsulation Methods for Transport of Layer 2 Frames Over IP and MPLS Networks, draft-martini-l2circuit-encap-mpls-09.txt (Feb. 2005), available at https://tools.ietf.org/html/draft-martini-l2circuit-encap-mpls-09, WSOU-HPE-00007841
4	IETF, draft Transport of Layer 2 Frames Over MPLS, draft-martini-l2circuit-trans-mpls-04.txt (Nov. 2000), available at https://tools.ietf.org/html/draft-martini-l2circuit-trans-mpls-04, WSOU-HPE-00007859
5	Declaration of Scott M. Nettles, Ph.D.
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6	Eric C. Rosen (Cisco Systems, Inc.) & Yakov Rekhter (Juniper Networks, Inc.), IETF RFC 2547, *BGP/MPLS IP VPNs* (version 3 Oct. 2004), available at https://tools.ietf.org/html/draft-ietf-l3vpn-rfc2547bis-03
7	F. Le Faucheur et al., IETF RFC 3270, *Multi-Protocol Label Switching (MPLS) Support of Differentiated Services*, available at https://tools.ietf.org/html/rfc3270

I. U.S. PATENT NO. 7,280,534 (CASE NO. 6:20-CV-00725-ADA)

A. "associated IP service controller (IPSC)" (claims 1, 20) / "IP service controller (IPSC) associated with a CE" (claim 24)

HPE misunderstands the inventions of the '534 patent. Its lengthy and convoluted construction is unnecessary, unclear, and adds confusion rather than serving its purported goal of "accurately conveying the scope of the claims to the jury." Resp.[1] at 1.

HPE improperly asserts that an IPSC must be "one of at least two distinct mechanisms for exchanging routing information." This is incorrect because asserted claims 1, 20, and 24 are directed to "a method for providing Internet Protocol (IP) Virtual Private Network (VPN) services," *i.e.*, setting up a VPN. The claims do not recite "exchanging routing information" and the claims are clear about the actions performed by the IPSC. The specification states that, the IPSC "serves as a mechanism for exchanging routing information . . . between the edge switches." '534 patent at 4:19–23. However, the specification does not indicate that the CEs also serve as a mechanism for exchanging routing information between edge switches in the service provider network. As discussed below, the patent consistently uses the term "edge switches" to refer to devices that are part of a service provider network. HPE's insertion of "customer edge switches" in its construction is unsupportable and adds confusion.

HPE's construction is also incorrect because customer edge device, *i.e.*, the CE, can be a router or a switch, *see*, *e.g.*, '534 patent at 3:29–31 ("The CE device 122 may be a router or a switch, and the connection to the provider edge device 108 is identified via a layer-1 or layer-2

[1] Brazos cites to its Opening Claim Construction Brief as "Op." and HPE's Responsive Markman Brief as "Resp." Emphasis in quotations throughout the brief are added, unless otherwise indicated.

identifier 126."). HPE's assertion that routing information is exchanged between "at least two customer edge ***switches***" is wrong and contradicted by the specification.

To support its inclusion of the phrase "***one of at least two distinct*** mechanisms," HPE contends that other limitations." Resp. at 2. HPE's construction contradicts its own statement by asserting that the IPSC is "installed either ***on the [customer edge] switches themselves*** or at a remote server." HPE provides would be nonsensical if the IPSC and the CE were one and the same no reason why a person of ordinary skill in the art would be unable to differentiate between the IPSC and the CE based on the claims and specification.

HPE also contends that the IPSC and the CE are both "modules" or "mechanisms," *i.e.*, software that is capable of being "installed . . . on" a hardware device—but they are not. The '534 patent is clear that the IPSC may be a combination of hardware and software. *See id.* at FIG. 3, 5:57–63 ("FIG. 3 depicts a high-level block diagram of an IP service control (IPSC) 130 of the present invention. That is, FIG. 3 depicts a block diagram illustrating the functional aspects of the IPSC of the present invention. The IPSC module 130 may be written in any software program capable of high-speed communications, such as C, C++, Pearl, Java, among others."), 5:3–6 ("[I]t is intended that the processes described herein, be broadly interpreted as being equivalently ***performed by software, hardware, or a combination thereof***."). The CE is clearly a device, which, of course, also includes software components. *See*, *e.*g., *id*. at 3:29–31, 5:3–6. The patentees did not describe the CE as a mechanism anywhere in the specification. The CEs are devices, such as routers, within the customer edge network. *Id.* at 3:29–31. The specification unequivocally states, "it is intended that the processes described herein, be broadly interpreted as being equivalently ***performed by software, hardware, or a combination thereof***."

Id. at 5:3–6. The patentee indicated no intent to limit the IPSC or the CE solely to software implementations. Thus, HPE construction is improperly narrow and should be rejected.

HPE is also incorrect in asserting the IPSC must be installed "on the [customer edge] switches themselves or at a remote server." The '534 patent discloses that the IPSC is associated with an edge switch that is part of a service provider network, not with the customer edge device. *See*, *e.g.*, *id*. at 4:19–32 ("In one embodiment of the present invention, the edge switch 108 comprises an IP service control (IPSC) module 130. . . . Each edge switch 108 is associated with an IPSC 130.), FIG. 1, 4:26–29 ("Each edge switch 108 is associated with an IPSC 130."). The "edge switch 108" that the patent identifies as comprising an IPSC is consistently identified as part of the service provider network. *See id*.; *see also id*. at 3:8–11 ("The ***service provider network 102*** comprises a core network 106 formed by a plurality of core devices . . . and an edge network formed by a plurality of edge ATM/FR switches 108_1 through 108_m (collectively ***edge switches 108***)."), 3:29–31 ("The CE device 122 may be a router or switch, and the connection to the ***provider edge device 108*** is identified via a layer-1 or layer-2 identifier 126."). A stated goal of the invention is to offload routing responsibility from the customer edge devices to the provider edge via the IPSC. A requirement that the IPSC be installed on the "[customer edge] switches themselves," is contrary to this goal and should be rejected.

To be clear, Brazos does not contend that the IPSC is never installed on a piece of hardware. Brazos's position is that installation on an edge switch or implementation by a server in the service provider network are not the exclusive means by which the inventions of the '534 patent may be implemented. The '534 patent seeks to "enable a service provider to provide IP-VPN services for customers and service providers utilizing layer-2 point-to-point connectivity

. . . in a cost effective manner." *Id*. at 8:3–6. HPE's attempt to limit the claims to the two embodiments described in the specification should be rejected.[2]

Lastly, HPE's attempt to limit the association between the IPSCs and the CEs to one that is "fixed" is contrary to the patentee's language and should be rejected. If the patentee wanted the association between the IPSC to be "fixed" in the manner HPE seeks, the patentee would have used the word "fixed" in the claims. HPE's concern that "WSOU will claim any fleeting, split-second interaction between an IPSC and a customer edge makes them 'associated' with each other," Resp. at 5, is unfounded. HPE wants the Court to believe that term "associated" only has meaning if "when the customer edge is online, it is always connected to the same identifiable IPSC," *id*., but this is not required by the claims. The claims require that the IPSC and the CE are associated with one another for the purposes of carrying out the steps of the claimed method. The claims do not require some "fixed" or permanent association between "a distinct module, installed on a specific piece of hardware, associated with specific customer edges." *Id*. at 4. HPE's attempt to narrow the claims in this way to avoid infringement is unsupportable and should not be permitted.

B. "unique loop-back addresses of customer edges (CE)" (claims 1, 24) / "unique loop-back addresses of other customer edges (CE)" (claim 20)

HPE makes no attempt to support its addition of "over the OOB (out-of-band) control virtual circuit, where the OOB control virtual circuit defines paths by ATM (Asynchronous Transfer Mode), FR (Frame Relay) or other layer-2 connectivity type, and where the IPSC stores the CE loop-back information in the routing databases (tables)," thereby conceding that this requirement is unsupportable. HPE admits that its goal is for the exchange of the loop-back

[2] *Phillips v. AWH Corp*., 415 F.3d 1303, 1323, (Fed. Cir. 2005) (*en banc*).

addresses between the CEs to be limited to layer-2 data virtual circuits, Resp. at 5–7, but claim terms should not be limited to a preferred embodiment, even if that is the only embodiment disclosed.[3] Even assuming, *arguendo*, that the claims were limited to layer-2 point-to-point connectivity, which they are not, that limitation would be at the provider edge, not at the customer edge when the CEs exchange loop-back addresses. The specification explains that the invention seeks to overcome the incapability of ***service provider*** networks that implement only ATM or Frame Relay switches to provide MPLS-like services. *See* '534 patent at 1:54–67. HPE's attempt to limit communication between customer edge devices to layer-2 protocols is unsupported by the specification and contradicted by the background art cited within.

The '534 patent makes clear that CEs can be routers. *See*, *e.g.*, '534 patent at 1:44–47 ("IP data from a customer edge (CE) device (*e.g.*, router) is sent to an ingress provider edge (PE) router . . . ."). Version 3 of IETF Request for Comment 2547, *BGP/MPLS IP VPNs*, released in October 2004,[4] prior to the October 2007 issuance of the '534 patent, explains:

> Routers can be attached to each other, or to end systems, in a variety of different ways: PPP connections, ATM VCs ("Virtual Circuits"), Frame Relay VCs, ethernet interfaces, VLANs ("Virtual Local Area Networks") on ethernet interfaces, GRE tunnels, L2TP ("Layer-2 Tunnels Protocol") tunnels, IPsec tunnels etc. We will use the term "attachment circuit" to refer generally to some such means of attaching to a router. An attachment circuit may be the sort of connection that is usually thought of as a "data link," or it may be a tunnel of some sort; what matters is that it be possible for two devices to be network layer peers over the attachment circuit.

Ex. 6 (Eric C. Rosen (Cisco Systems, Inc.) & Yakov Rekhter (Juniper Networks, Inc.), IETF RFC 2547, *BGP/MPLS IP VPNs* (version 3 Oct. 2004), available at https://tools.ietf.org/html/draft-ietf-l3vpn-rfc2547bis-03) at 6. GRE tunnels and IPsec tunnels are layer-3 protocols.

[3] *Phillips*, 415 F.3d at 1323.

[4] Version 2 of RFC 2547 was cited in the specification. *See* '534 patent at 1:29–35.

Limiting the "loop-back addresses" to "unique IP addresses" would render dependent claim 3 superfluous in violation of claim differentiation principles.[5] Claims 1 and 20 merely require that the CEs exchange "unique loop-back addresses . . . via a respective data virtual circuit therebetween."[6] Claim 3 adds the limitation "wherein said loop-back addresses comprise an IP address." With respect to the asserted dependent claims, all that is required is that each CE have its own unique address and that the addresses are exchanged, or received, via a data virtual circuit. HPE's attempt to limit the VC to a layer-2 medium is improper. There are many types of VCs other than ATM and Frame Relay that could be used to exchange addresses between the CEs in accordance with the claimed invention, such as Transmission Control Protocol (*i.e.*, TCP, which is a layer-4 protocol) and MPLS (a layer-2.5 protocol). IP itself is a layer-3 protocol, so for that reason alone, HPE's construction is wrong.

HPE misunderstands the claimed methods. The discussion of an illustrative "ATM/FR out-of-band (OOB) circuit path" has nothing to do with the manner in which the CEs exchange addresses with one another or receive addresses from one another. '534 patent at 5:16–21. The point is that "a separate control virtual circuit (VC) 124 is utilized between the CE 122 and the IPSC 130 of the respective edge switch[es] 108 to exchange CE to CE reachability (*i.e.*, addresses), as well as provide control information." *Id*. In other words, the VC between the CEs and the IPSC is a separate virtual connection from the circuits that connect the CEs in the customer network to one another. None of this has anything to do with how the loop-back address is defined. The "unique loop-back address" is just that: an address that uniquely

[5] In its opening brief, Brazos was incorrect to state that "loop-back addresses" are "unique IP addresses." The independent claims are not limited to IP addresses and could use other layer-2 protocols, such as media access control ("MAC"), or other layer-3 or layer-4 protocols discussed.

[6] In the case of claim 20, the requirement is that a CE receives "unique loop-back addresses of other customer edges (CEs) via a respective data virtual circuit therebetween."

identifies each CE as itself. This address could be an IP address, in accordance with claim 3, or it could be communicated among CEs by another layer-2, layer-3, or layer-4 protocol. Nothing in the '534 patent, its specification, or its file history limits CE-to-CE communication to layer-2. There is nothing unclear about what the "unique loop-back addresses of customer edges (CE)" are, and these terms do not need to be construed.

C. "broadcasting from said associated IPSC, said IP addresses of said associated customer networks to other IPSCs" (claims 1, 20, 24)

HPE admits that there is no basis to replace the patentee's choice of the word "broadcasting" with its own choice of the word "sending." *See* Resp. at 7. As to the remainder of HPE's construction, HPE does not argue lexicography or disavowal. *Id*. Instead, HPE admits that its construction is an effort to import limitations from the specification, *id.*, in an improper attempt to limit the claims to transmission over a layer-2 medium.[7] This blatant attempt to avoid liability via an improperly narrow construction should be rejected.

While an objective of the invention may be to give layer-2 systems layer-3 qualities, the asserted claims are directed to methods for providing VPN services. Neither the claims nor the specification limits the scope of the inventions solely to the data link layer. HPE's assertion that the specification addresses only embodiments directed to layer-2 is not sufficient to narrow the claims in the manner HPE seeks, and this approach has been rejected by the Federal Circuit.[8]

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[7] *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012) ("It is . . . not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into claims . . . .").

[8] *Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1354-55 (Fed. Cir. 2003) (holding that because the specification did not explicitly "disavow[] any embodiment other than" the preferred one or "in any other way indicate that the invention was intended solely for use in such an environment," it was inappropriate to limit it and stating "[a]bsent a clear disclaimer of particular subject matter, the fact that the inventor may have anticipated that the invention would be used in a particular way does not mean that the scope of the patent is limited to that context.").

HPE has cited no definitional language in the specification related to this term and no other intrinsic evidence to show that the patentee disavowed claim scope in a way that the "broadcasting" term should be limited to layer-2 media. HPE has not argued that a person of ordinary skill in the art would be unable to understand the scope of the claims in which the "broadcasting" term appears. Accordingly, HPE's proposal should be rejected and the term given its plain and ordinary meaning.

II. U.S. PATENT NO. 7,386,630 (CASE NO. 6:20-CV-00726-ADA)

A. "a customer policy comprising a tunneling mode and a tunnel group identifier" (clams 1, 12, 18)

HPE provides no legal or factual justification for redefining "a customer policy" as "a policy of a network user." *See* Resp. at 8–9. The specification states that "[c]ustomer policies define the rules applied to forward certain types of customer traffic." '630 patent at 6:6–11. As set forth in Brazos's opening brief, these rules are defined by the customer policies in a number of ways, including source destination host groups, application profiles, traffic profiles, service class, policing action, and role names. *See* Op. at 9.

HPE confuses the role that customer policies have in setting forth how customer traffic is to be treated by the network with lexicography, but they are not one and the same. The specification does not state that customer policies ***are defined as*** the rules applies to forward certain types of customer traffic. The '630 patent also does not define "a customer policy" as "a policy of a network user." The definition of the term "user" that HPE cites states that the "user" ***employs*** a device to communicate or access resources over a network. *See* '630 patent at 4:3–6. The "user," whether a person or a business organization, does not necessarily create or implement the customer policy. For example, a customer may be a business organization that indicates to its network provider that voice data should take precedence over video data in the

network, but an employee at the business organization that "employs a device to communicate or access resources over a network" does not themself define the traffic rules on the network that result in voice data being forwarded with priority over video data.

HPE's construction also blatantly ignores that the "operator . . . maintains or services a packet-based network," not the user. '630 patent at 4:3–8. In other words, the user, who is sometimes the customer, may indicate preferences as to how different types of traffic are treated by the network, but it is the operator who implements those preferences in the customer policies. This is done by defining "source/destination host groups, application profiles, traffic profiles, service class, policing action and roles names," as well as "a tunnel group identifier and a tunneling mode, when supporting MPLS." *Id*. at 6:6–11. HPE's construction is incorrect and improperly attempts to narrow the claims by replacing the plain language of the claims with its own preferred verbiage. It should be rejected.

As to the "tunneling mode,"[9] HPE incorrectly mixes principles of lexicography and disclaimer to argue that the patentee defined the term. Contrary to HPE's recitation of the file history, the patentees were not distinguishing over prior art when they stated:

> The present application provides that a tunneling mode indicating what Diffserv code point should be carried in the IP headers [when] packets exit [an] MPLS network, as to enable transport of Diffserv over MPLS. A tunneling mode is defined in the description as a method of translating the Diffserv information in the MPLS headers (labels and EXP field) into DSCP values in the encapsulated IP header when packets exit the MPLS network.

HPE Ex. 5 (Applicant Arguments/Remarks of October 30, 2007) at 12. The applicants did not amend the claims and narrowly define the term "tunneling mode" in order to distinguish over the references at-issue, *id*., and, therefore, disclaimer does not apply. The applicants were not

[9] Claims 1 and 12 recite "tunnel mode." Claim 18 recites a "tunneling mode."

disclaiming claim scope in this section, but rather were summarizing certain aspects of the claimed inventions. *See id*. Lexicography also does not apply because the patentee did not redefine the term "tunneling mode" in a manner that differs from its widely understood plain and ordinary meaning to a person of ordinary skill in the art. As described in RFC 3270, known methods of Diffserv tunneling over MPLS included pipe mode, short pipe mode, and uniform mode. *See* Ex. 7 (IETF RFC 3270) at 13–22. However, neither the language of the claims nor the specification indicates that the patentee intended to define "tunneling mode" in a way that differs from its plain meaning to a person of ordinary skill in the art.[10]

As to the May 4, 2005 Arguments/Remarks cited by HPE, Resp. at 10–11, there was no disclaimer or limitation of claim scope there either. The applicants pointed out that the reference at-issue, Gibson, did not disclose or suggest a tunnel group, a tunnel group identifier, or a tunneling mode. *See* HPE Ex. 6 at 10–11. The applicants stated that "Gibson does not disclose or suggest the tunneling limitations as defined by the specification," but did not indicate that the specification defined any of these terms in a manner that was different that their plain and ordinary meaning. *Id*. at 11. Further, the applicants referenced the "tunneling limitations" generally, not specifically the "tunneling mode." In addition, the applicants did not amend the claims in a more limited fashion to overcome Gibson. Rather, the applicants informed the examiner that Gibson did not disclose the claimed tunneling limitations and requested that the rejection based on Gibson under § 102(e) be withdrawn. *Id*. at 10. The examiner found these

[10] *See HTC Corp. v. IPCom GmbH & Co*., 667 F.3d 1270, 1276 (Fed. Cir. 2012) (noting that "[c]laim language and the specification generally carry greater weight than the prosecution history" and finding that district court and defendant "place[d] too much weight on the prosecution history").

arguments to be persuasive and withdrew the rejections of the pending claims based on Gibson. *See* HPE Ex. 7 (Notice of Allowance) at 1. In allowing the claims, the examiner stated

> Specifically, the feature of configuring a customer policy comprising a tunnel mode and a tunnel group identifier is not expressly taught or suggested by the prior art, wherein Applicant's disclosure defines the tunnel mode as a method of "translating DiffServ information in the multi-protocol label switching header into DSCP values" having two modes: uniform or pipe mode (see Applicant's Specification, page 4). Applicant's hardware embodiment of a policy server having this functionality is not disclosed by the prior art.

Id. at 7. There was no disavowal and the claims were allowed based on the full scope of the "policy server device" limitation, not on a narrow interpretation of "tunneling mode," as HPE implies based on out-of-context statements. A complete review of the file history of the '630 patent makes clear that the inventor did not limit the invention over the course of prosecution by narrowing the claim scope. Moreover, the cited unilateral statements of the examiner regarding reasons for allowance do not create a clear and unambiguous disavowal of claim scope.[11]

Regarding the "tunnel group identifier," the patentee did not redefine the meaning of this claim term, setting out an "uncommon definition in some manner within the patent disclosure so as to give one of ordinary skill in the art notice of the change."[12] As made clear in Brazos's opening brief, the specification details the characteristics of the tunnel group. *See* Op. at 15 (quoting the '630 patent at 7:41–54). Again, the applicants did not make narrowing amendments

[11] *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1345, 1347 (Fed. Cir. 2005) (stating that "the examiner's unilateral remarks alone do not affect the scope of the claim" and explaining that "[t]his court has recognized that an Examiner's Statement of Reasons for Allowance 'will not necessarily limit a claim.'" (citations omitted)); *see also Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 736–37 (Fed. Cir. 2014) (rejecting reliance on examiner's statements in the Notice of Allowance to limit the claim scope because they were not the applicant's statements, explaining that "[i]n any event, the statement is not the applicants' statement").

[12] *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quotation marks and citation omitted).

to overcome the Gibson reference. *See* HPE Ex. 6 (Applicant Arguments/Remarks of May 4, 2005) at 11–12. Pointing out that "Gibson does not disclose or suggest any equivalent grouping, or a single identifier for any such grouping" does not demonstrate that "the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be."[13] HPE has provided no reason why the patentee's chosen words should be replaced with cherry-picked portions of the specification that would improperly narrow the claims.

B. "corresponding to the tunnels" (claim 1)

This term does not lack antecedent basis. "[T]he tunnels" refers back to "multi-protocol label switching tunnels" recited directly prior to "corresponding to the tunnels." Claim 1 further states that "at least one of the network devices" ***corresponding to the tunnels*** comprises "an egress interface of one of said multi-protocol label switching tunnels." HPE has provided no evidence that there is anything ambiguous, unclear, or uncertain about what it means for a network device that includes an egress interface to correspond to an MPLS tunnel, *see* Resp. at 11–12, and HPE has not and cannot meet its burden to show this term is not indefinite.[14]

C. "policy targets" (claims 12, 18)

HPE misunderstands what it means for a claim term to lack antecedent basis. According to HPE, because the plural "policy targets" is not preceded by an indefinite article (which would be grammatically incorrect), the term is indefinite. Resp. at 13. This is incorrect. The definiteness requirement does not demand that each and every claim term be "explained or introduced via the claim language." Resp. at 13. If every single word or phrase utilized in a patent claim had to be explained or introduced prior to its use, patent claims would be absurdly

[13] *Phillips*, 415 F.3d at 1317.

[14] *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

lengthy and unwieldy. Section 112(b) requires that the claims particularly point out and distinctly claim the subject matter. Claims 12 and 18 of the '630 patent meet this requirement. They explain that a policy target is "a network device that includes an interface assigned a role name associated with the customer policy, at least one of the interfaces comprising an egress interface of one of multi-protocol label switching tunnels." The claims themselves explain what a policy target is when the term "policy target" is introduced.

HPE's argument against Brazos's construction, which points to the definitional language in the specification that "[a] policy target refers to any network device at a network node where the policy is enforced, such as a router," '630 patent at 5:52–54, actually admits that the patent defines this term. Resp. at 14. HPE's unsupported criticisms that this term is indefinite does not make it so. The patentee summarizes the invention as "provid[ing] devices, software and methods for policy based management of two combined functionalities (Diffserv over MPLS) in a single network" and then describes the invention in more detail. '630 patent at 4:19–31, 4:32–8:33. The specification explains:

> Block 200 operates to configure differentiated services over multi-protocol label switching (Diffserv/MPLS) in network 100. In broad terms, block 200 operates as a translator to simplify different policy mapping. And once the mapping is defined, the invention automates the deployment of the mapping across the network to simplify the management. More particularly, block 200 includes a customer policy, a network policy and a mapping policy. Block 200 is arranged to create a group of MPLS tunnels, and associate the tunnels to the mapping policy and the customer policy. The customer policy includes a tunnel group identifier and a tunneling mode, and maps customer traffic to MPLS tunnels. Block 200 then translates the customer policy, the network policy and the mapping policy into device-specific commands, and then deploys the device-specific commands to policy targets. ***In this case, policy targets are network devices that are to implement the specific routing assignments, and the device specific commands are deployed to the interfaces of such network devices***.

Id. at 4:41–63. Given the thorough description of policy targets in the specification, a person of ordinary skill in the art would be able to understand the scope of claims 12 and 18.

HPE's confusion seems to be an inability to accept that some devices within the network, such as routers, will function as policy targets—where routing assignments based on the mapping policy, the network policy and/or the customer policy are enforced—while another device within the network will operate as the policy server and allocate resources by sending or deploying the policies to the targets. *See* '630 patent at 5:9–57. A policy server can be any network device that includes a network interface and a processor coupled to the interface that can implement the operational architecture to support Diffserv over MPLS traffic engineering. *Id*. As an illustrative example, Figure 3 depicts a "diagram of a network implementing a policy server according to aspects of the invention." *Id*. at 4:64–65.

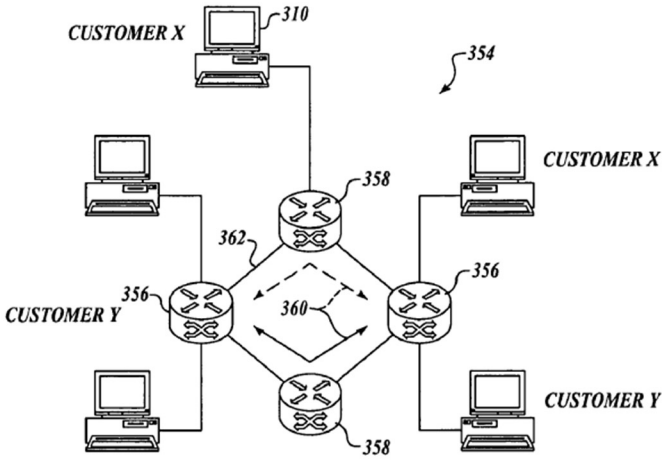

Fig.3

> Network 354 includes two edge routers 356 and two core routers 358. Policy server 310 can assign different customer applications into different Diffserv classes by service policies, and allocate the resources accordingly by network policies. Such will control which one of the network paths 360 will be followed along one or more communication links 362, for communication within each of customers X, Y.

Id. at 5:1–8. In this example, 310 is the policy server, which "translates business goals or policies into configurations of network resources, and automates the configurations across multiple different network elements and different technologies (*e.g.* MPLS and Diffserv)." *Id*. at 4:25–29. The policy server accomplishes this by sending or deploying the mapping policy, the network policy, and/or the customer policy to the policy targets, *i.e.*, the routers identified as 356 and 358 in Figure 3, and it is here at these nodes that the policies are enforced. The '630 patent clearly differentiates between the policy server and the policy targets and provides a detailed explanation of how the policy targets interact with the other elements of the asserted claims. Claims 12 and 18 are not indefinite.

III. U.S. PATENT NO. 7,443,832 (CASE NO. 6:20-CV-00727-ADA)

A. "information data representative of at least two chosen criteria" (claim 1)

For this term, HPE again misinterprets the patentee's use of the word "defines" in the context in which it is used as lexicography. Resp. at 16. The patentee did not use the words "is defined as," "means," or "refers to" in an effort to clearly set out an "uncommon definition in some manner within the patent disclosure so as to give one of ordinary skill in the art notice of the change."[15] Rather, it uses the words to explain how "information data," which is a term that is readily understood by a person of ordinary skill in the art, operates in the context of the invention. Nevertheless, in the interests of compromise and to the extent it would aid the Court, Brazos is willing to agree to a modified construction of "**information data representative of at least two numeric values that identify resource characteristics and available connections between nodes**." This construction more accurately reflects how the patentee describes the two chosen criteria in the specification:

[15] *In re Paulsen*, 30 F.3d at 1480.

> In particular, the information data defines the resources associated with the various connections between nodes, in terms of characteristics and availability, and the list of LSR nodes, which is regularly updated. The resource characteristics include in particular the topology (available links), bandwidth and transit time between two nodes of a connection.

'832 patent at 5:65–6:3. Although the intrinsic evidence supports a plain and ordinary construction, this alternative proposal should avoid further dispute on the construction of the term.

B. "a processing means for . . ." (claim 1)

In its opening brief, Brazos demonstrated that the presumption that claim 1 of the '832 patent is subject to § 112, ¶ 6 has been overcome because the claim itself connotes sufficient structure. Op. at 16–18. Unlike the decisions HPE relies upon, *see* Resp. at 19, claim 1 does not broadly recite generic functions implemented by a general-purpose computer. Rather, the claim recites a step-by-step set of instructions to accomplish a specific end. Here, the end is "selecting a path from among said classified possible paths and then associating with said stream to be switched to a label representative of said selected path so that said labeled stream is switched via said path to the destination node." Claim 1 is an algorithm because it is a "fixed step-by-step procedure for accomplishing a given result."[16] It terminates, or has an end, and the step-by-step instructions confer sufficiently definite structure to overcome the presumption that § 112, ¶ 6 applies.

The first step of the algorithm instructs "receiving a ***path set-up request*** containing ***a set of service data*** associated with a stream to be switched, [and] for determining in ***said table at least two criteria stored in corresponding relationship to said set of service data associated***

[16] *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1384–85 (Fed. Cir. 2011).

with the stream." The path set-up request, the set of service data, and the table of correspondences that is stored in the previously recited "memory means" are all structural. These are concrete, identifiable structures sufficient "for a person of skill in the field to provide an operative software program for the specified functions of "receiving the path set-up request . . ." and "determining in said table at least two criteria in corresponding relationship to said set of service data associated with the stream." The next step of the algorithm, "ensuring the connectivity of said multiplicity of label switched routers, on the basis of information data stored in said descriptive structure," also provides sufficient structure in describing that the "connectivity of said ***multiplicity of label switched routers***" is ensured based on "information data stored in ***said descriptive structure***." Routers are network devices, which are structural, and the specification describes the "descriptive structure" as "a graph G(X,U), where X represents the set of LSR nodes of the network and U the set of directional links (or connections) (i,j)." '832 patent at 6:34–37.

The claimed algorithm then instructs one to "calculat[e] from among said label switch routers possible paths between a departure node and a destination node taking account of at least one of said two criteria that have been determined and then deducing an ideal solution from performances of said possible paths on at least one of said criteria." *Id*. at claim 1. The specification provides further detailed instructions for a preferred method to calculate a possible path r* at Col. 7, line 10 through Col. 8, line 32.[17] The specification also identifies "an adapted label assignment algorithm," *i.e*., the "Martins algorithm" and two adaptations of the Martins

[17] As part of the first part of the *Apple Inc. v. Motorola, Inc.* test, "we must construe the claim limitation to decide if it connotes "sufficiently definite structure" to a person of ordinary skill in the art, which requires us to consider the specification (among other evidence)." 757 F.3d 1286, 1296 (Fed. Cir. 2014), *overruled in-part on other grounds*, *Williamson v. Citrix Online*, *LLC*, 792 F.3d 1339 (Fed. Cir. 2015).

algorithm that could be used "[t]o calculate the various possible paths r* obtained by the method described hereinabove." *Id*. at 7:65–8:28.

Next, claim 1 instructs "deducing an ideal solution from performances of said possible paths on at least one of said criteria." Again, the specification further details how to deduce the ideal solution, Z(ꟿ). *Id.* at 8:33–52. The next instruction set forth in claim 1 is to "assign[] each possible path an interest value taking account of said ideal solution and then classifying said possible paths taking account their respective interest values, for which further details are provided. *Id.* at 8:54–9:17. The specification states that "[a] standard scalarization function can be used" to assign each possible path an interest value taking account of the ideal solution. *Id*. at 9:1–17. Finally, the instructions conclude with "selecting a path from among said classified possible paths and then associating with said stream to be switched a label representative of said selected path so that said labeled stream is switched via said path to the destination node." *Id*. at claim 1. The processing module achieves the specific result of switching the stream via the selected path by selecting "from the classified possible paths the k best classified paths, so as to route data via one of these k paths, preferably that which is the best classified (that with the lowest interest value U(r) in the example described here)." *Id*. at 9:28–31.

> Once the switchpath has been selected, the processing module P1 associates with the stream to be switched a label representative of said path. The departure edge router LER1 can then set up the selected path by reserving the resources that satisfy the criteria and constraints associated with the received stream. It then transmits the labeled stream to the destination router LER2 via each node LSR of the path that has been determined.

Id. at 9:44–52. Claim 1 of the '832 patent is a step-by-step procedure for accomplishing the specific, stated result of selecting a path and associating the stream with a label representative of the selected path, so that the stream is switched via said path to the destination node. Claim 1 is an algorithm and § 112, ¶ 6 does not apply. To the extent that the Court disagrees, the

specification connotes sufficient structure and that structure is clearly associated with the procedures set forth in claim 1, as described above. Claim 1 is not indefinite.

C. "deducing an ideal solution from performances of said possible paths on at least one of said criteria" (claim 1)

As explained in Brazos's opening brief, the "ideal solution" is not necessarily a possible path. *See* Op. at 19–20. The "ideal solution" is a mathematical construct and "the ideal path represented by the ideal solution Z(ʁ) does not necessarily correspond to one of the possible paths r of the set of possible paths determined. This is rarely even the case, in that the connections on which the optimum values are observed rarely constitute a connected sequence." '832 patent at 8:45–51. HPE now seeks to construe this term as "deducing an ideal solution from ***observed*** performances of ***all*** possible paths based on at least one of said criteria," but this construction is still incorrect. The claim does not require "observing the performances of all paths based on at least one of said criteria." It is an additional, fabricated limitation that is not supported by the specification. The '832 patent teaches that:

> The processing module P1 then forms an ideal solution Z(ʁ). To be more precise, the ideal solution Z(ʁ) is a vector taking the form of a multiplet of components. The components are calculated in the following manner.
>
> For each criterion Cp, the best performance value Z*p observed over the possible paths is extracted. Each best value of performance Z*p observed is called the optimum value associated with the corresponding criterion. The various optimum values then constitute the components of the ideal solution Z(ʁ)=(Z*1, Z*2, . . . , Z*p), representative of an ideal pathʁ.

'832 patent at 8:33–44. Contrary to HPE's latest proposal, the claimed algorithm does not observe performances of all possible paths. It extracts the best performance value for each selected criterion and then utilizes those optimum values to calculate an ideal solution that represents an ideal path. HPE provides no basis for rewriting the claim to narrow the "deducing"

instruction to include narrower limitations of "***observed*** performances" and "***all*** possible paths." HPE misunderstands the claimed invention and its incorrect construction should be rejected.

IV. U.S. PATENT NO. 7,519,056 (CASE NO. 6:20-CV-00728-ADA)

A. "VC label in a layer-2 MPLS label stack" (claims 1, 18, 21)

In the interest of compromise and to preserve the Court's and the parties' resources, Brazos agrees to HPE's proposed construction of this term.

B. "dynamically determined" (claims 1, 18, 21)

HPE has not met its burden to prove by clear and convincing evidence that these claims are indefinite. Claims are not indefinite unless they are "insolubly ambiguous."[18] The claims are not ambiguous because, as HPE admits, the relevant knowledge in the art is "replete with options for path management" and that there are "many different options for determining the LSP." Resp. at 26. The fact that there are many options for accomplishing a step of a claimed method does not make the claim indefinite.[19]

HPE's complaint that the specification does not identify a complete list of factors in response to which the claimed methods change "the particular LSP that is utilized by the dynamic MPLS tunnel," '056 patent at 9:7–12, also does not render the claims indefinite. The patentee is not required to identify every possible scenario or embodiment of the invention.[20]

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[18] *Exxon Research and Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

[19] *See S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1371 (Fed. Cir. 2001) ("The law is clear that patent documents need not include subject matter that is known in the field of the invention and is in the prior art, for patents are written for persons experienced in the field of the invention. To hold otherwise would require every patent document to include a technical treatise for the unskilled reader." (citation omitted)).

[20] *Biosig Instruments, Inc. v. Nautilus, Inc.*, 715 F.3d 891, 902 (Fed. Cir. 2013) ("Breadth is not indefiniteness.").

The patentee is required to particularly point out and distinctly claim the subject matter of the invention[21] and has done so.

The evidence that Brazos cites shows that a person of ordinary skill in the art was knowledgeable about the existing protocols that could be used to set up an LSP. HPE overlooks that setting up a VLAN only sets up the structure of the network. *See*, *e.g.*, '056 patent at 9:16–19.

> In accordance with an embodiment of the invention, a logical port is created which includes a binding to the target MPLS tunnel and to the target destination. The logical port can then be used in defining the broadcast domain of a VLAN. . . . In operation, the MPLS tunnel ID is used to identify the actual LSP on which a packet travels . . . . The actual LSP that corresponds to the MPLS tunnel is dynamically determined by an LDP.

'056 patent at 9:16–32. The patent also explains that "LSPs are provisioned using Resource Reservation protocol (RSVP) and Label Distribution protocol (LDP). LSPs can be established by network operators for a variety of purposes, such as to guarantee a certain level of performance, to route around network congestion, or to create tunnels for virtual private networks." *Id*. at 7:12–17. A person of ordinary skill in the art would be able to identify and implement a suitable LDP to determine the appropriate LSP corresponding to the MPLS tunnel based on conditions such as traffic load and latency. *See* Ex. 5, Nettles Decl. at ¶¶ 25–33. The term "dynamically determined" is not indefinite.

[21] 35 U.S.C. § 112, ¶ 2.

Respectfully submitted,

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